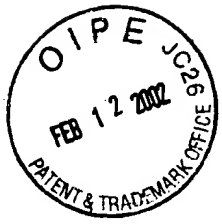
#5 Formal drawings MAA 2/25/02




**Attorney Docket No: B1034/7003**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
|---|---|
| Applicant(s): | John S. Thompson and Andrew M. Bird |
| Serial No: | 09/727,390 |
| Filing Date: | November 30, 2000 |
| For: | METHOD AND APPARATUS FOR SIMULATING THE MEASUREMENT OF A PART WITHOUT USING A PHYSICAL MEASUREMENT SYSTEM |
| Examiner: | Unassigned |
| Art Unit: | 2123 |

**Attn: Official Draftsperson**
Commissioner for Patents
Washington, DC 20231

**CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8(a)**

**I hereby certify that this document is being placed in the United States mail with first-class postage attached, addressed to the Commissioner for Patents, Washington, D.C. 20231 on the 28th day of January, 2002.**

**Gary S. Engelson**
**Reg. No.: 35,128**

## LETTER TO OFFICIAL DRAFTSPERSON

Sir:

Subject to the approval of the Examiner in this case, enclosed for filing are twenty (20) sheets of FORMAL DRAWINGS, Figures 1 through 18, for the above-referenced patent application.

The Commissioner is hereby authorized to charge any fees which may be required to Deposit Account No. 23-2825. A duplicate of this sheet is enclosed.

Respectfully submitted,
***John S. Thompson et al., Applicants***

By: _____

Gary S. Engelson, Reg. No. 35,128
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Docket No.: B1034/7003
Date: January 28, 2002
**xNDD**

11/13/00

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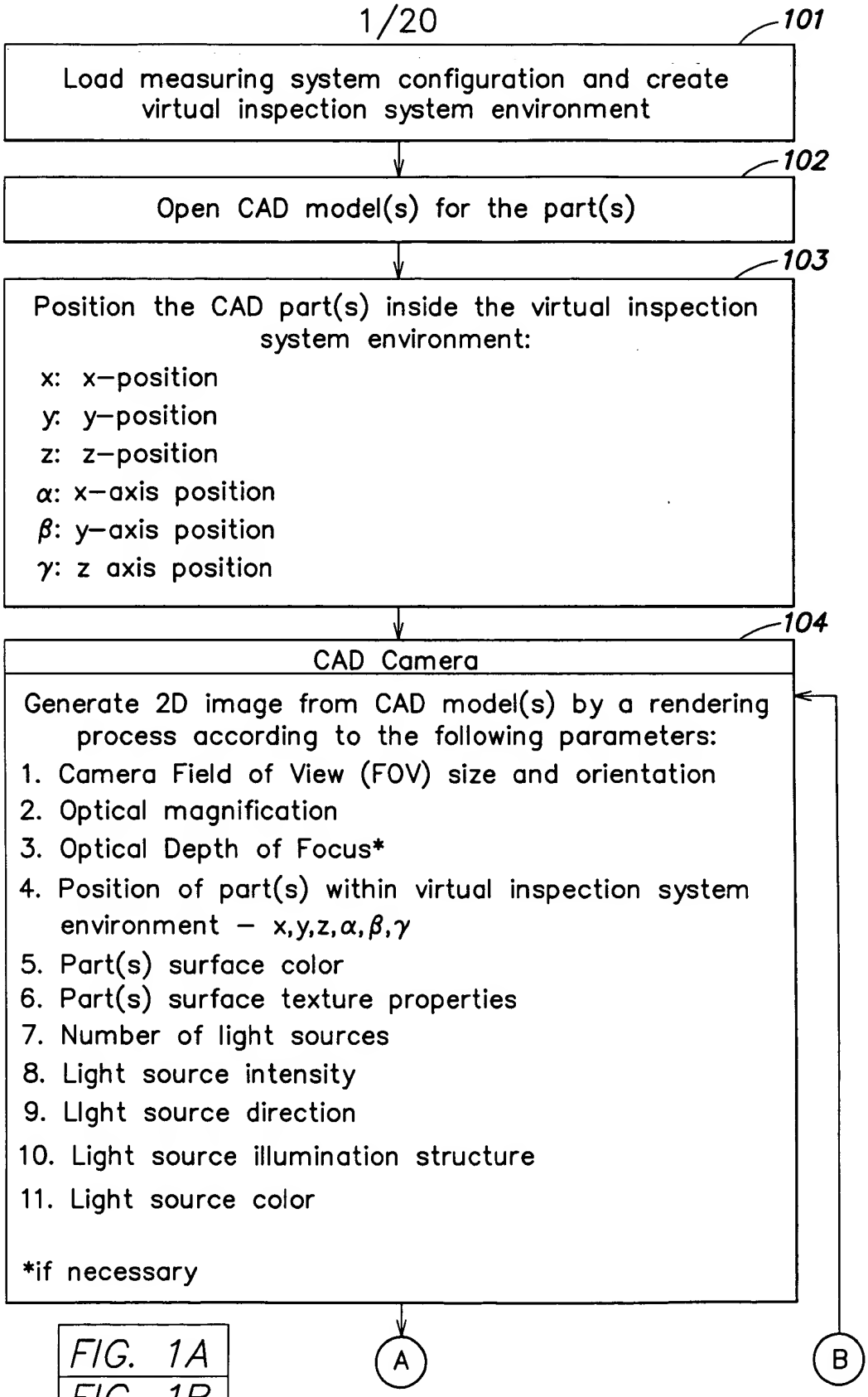


FIG. 1A
FIG. 1B

FIG. 1A

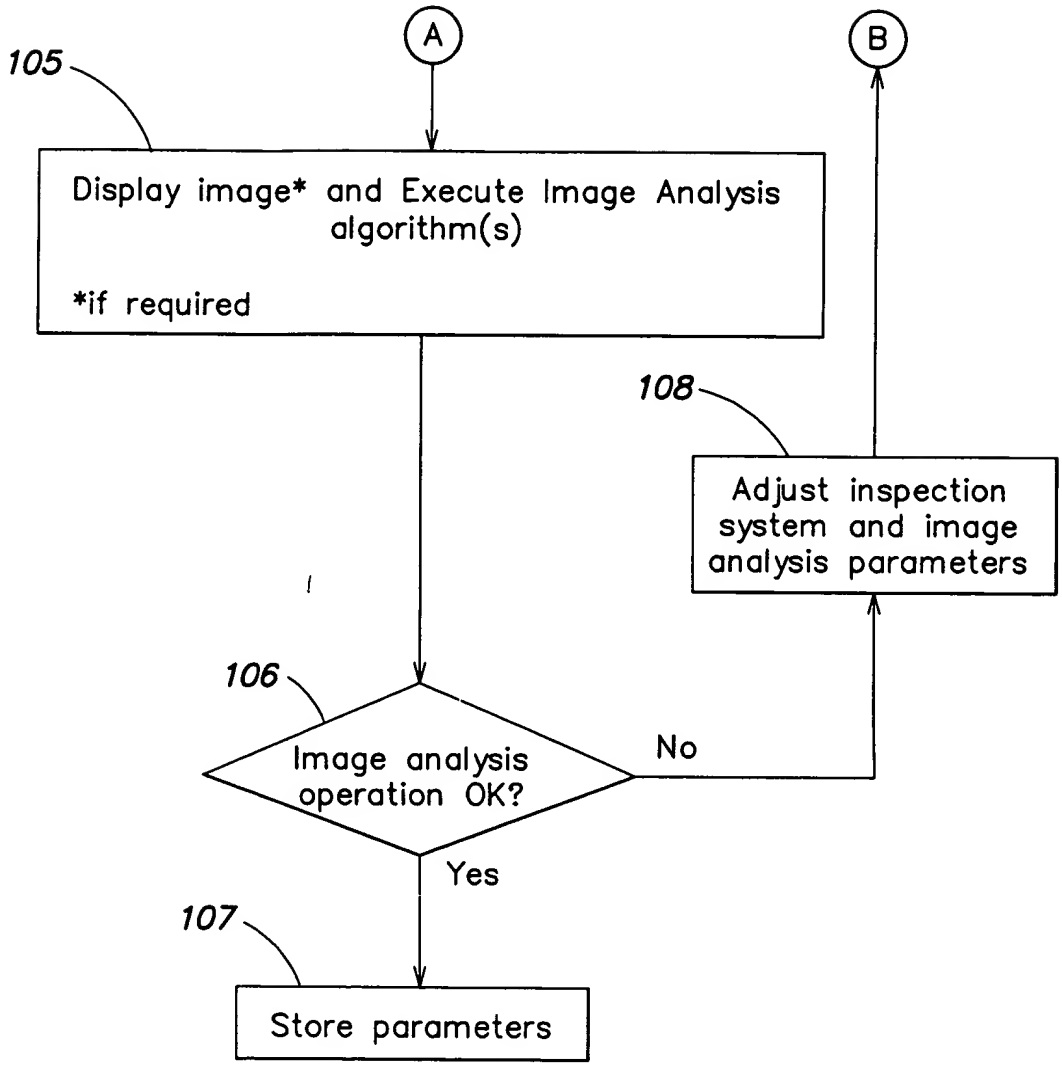
A
B
105
Display image* and Execute Image Analysis algorithm(s)
*if required
108
Adjust inspection system and image analysis parameters
106
Image analysis operation OK?
No
Yes
107
Store parameters

FIG. 1B

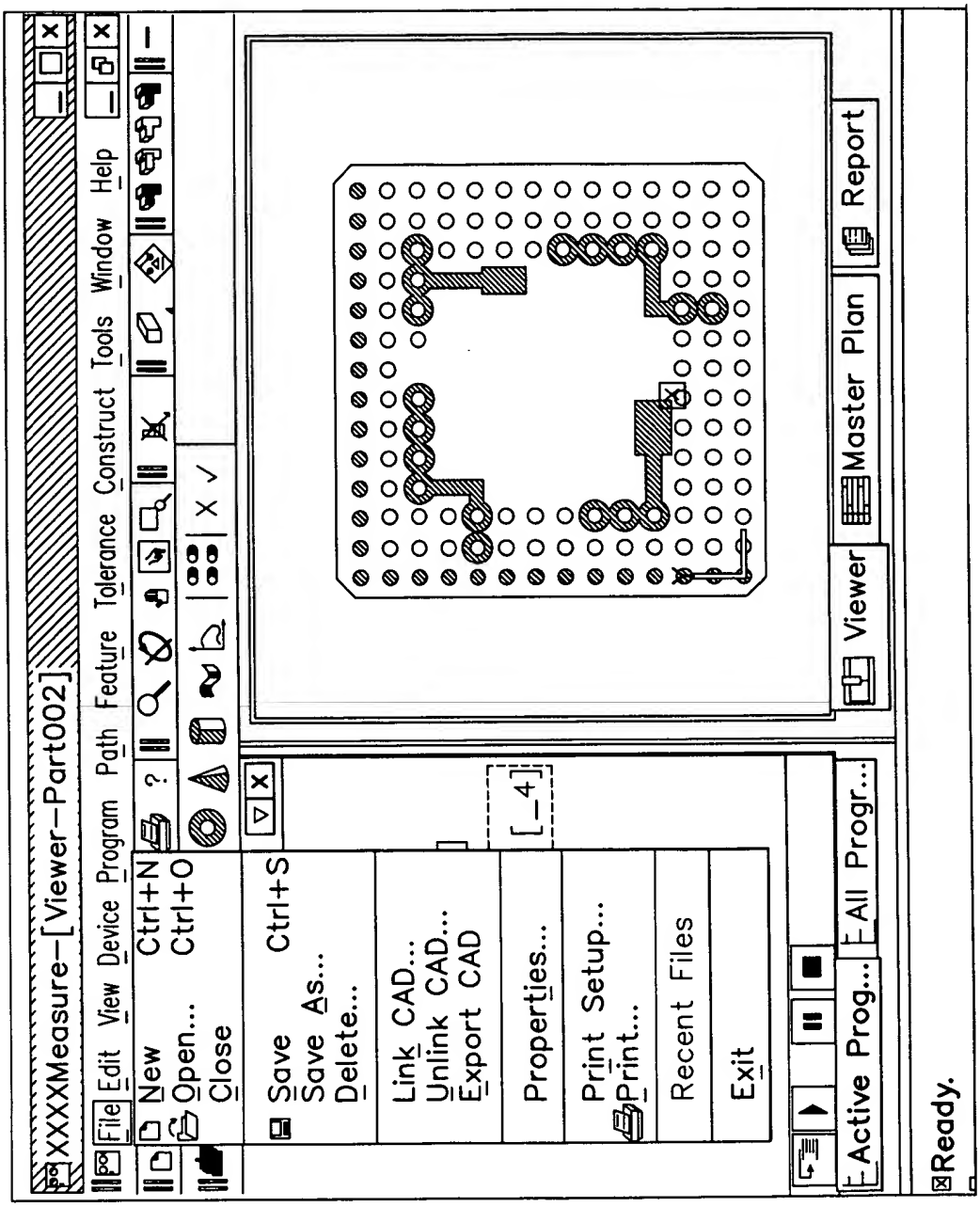
XXXMeasure-[Viewer-Part002]
File Edit View Device Program Path Feature Tolerance Construct Tools Window Help
New Ctrl+N
Open... Ctrl+O
Close
Save Ctrl+S
Save As...
Delete...
Link CAD...
Unlink CAD...
Export CAD
Properties...
Print Setup...
Print...
Recent Files
Exit
Viewer
Master Plan
Report
Active Prog...
All Progr...
Ready.

FIG. 2

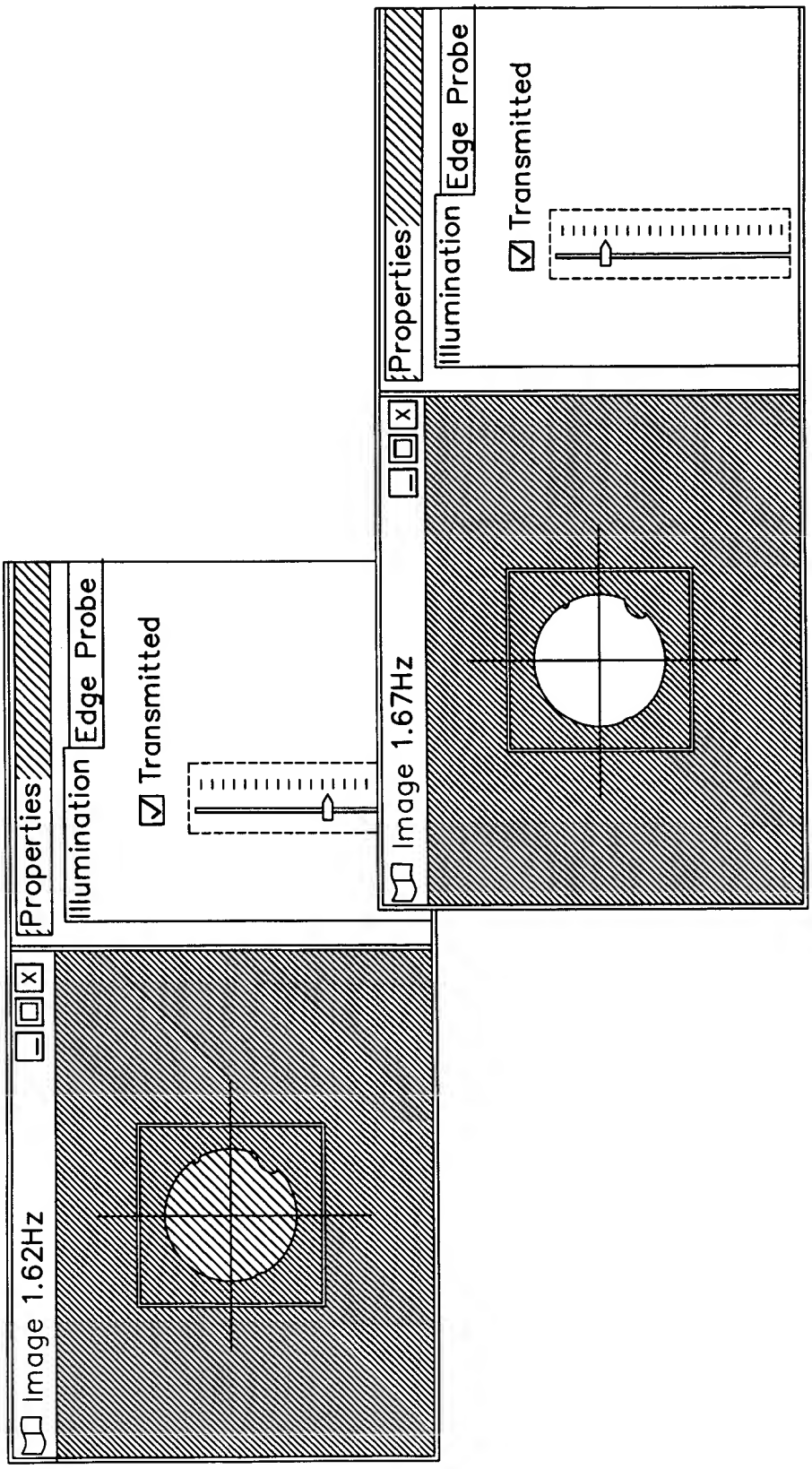
Image 1.62Hz
Properties
Illumination
Edge Probe
Transmitted
Image 1.67Hz
Properties
Illumination
Edge Probe
Transmitted

FIG. 3

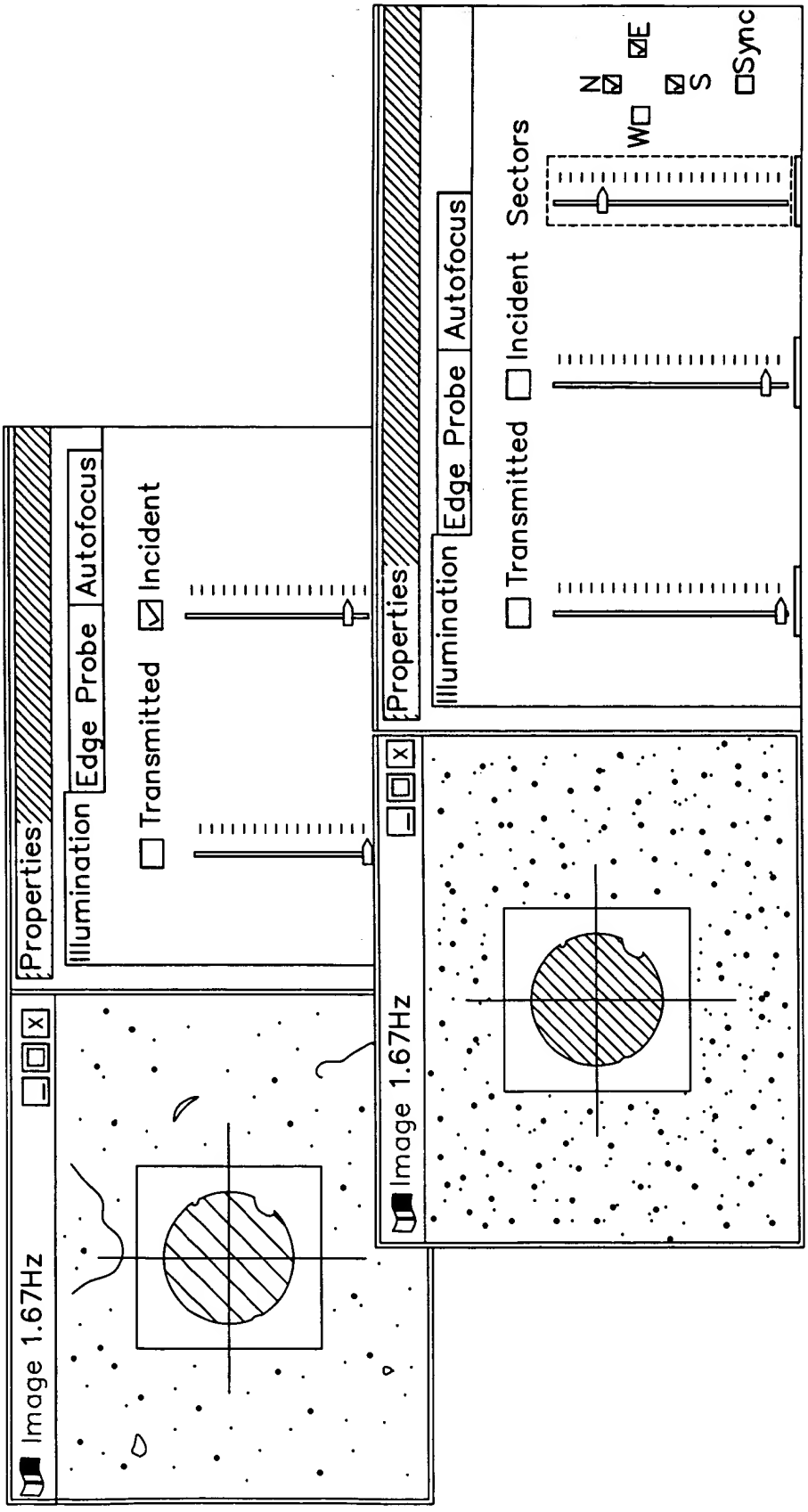
Image 1.67Hz
Properties
Illumination
Edge Probe
Autofocus
Transmitted
Incident
Image 1.67Hz
Properties
Illumination
Edge Probe
Autofocus
Transmitted
Incident
Sectors
N
E
W
S
Sync

FIG. 4

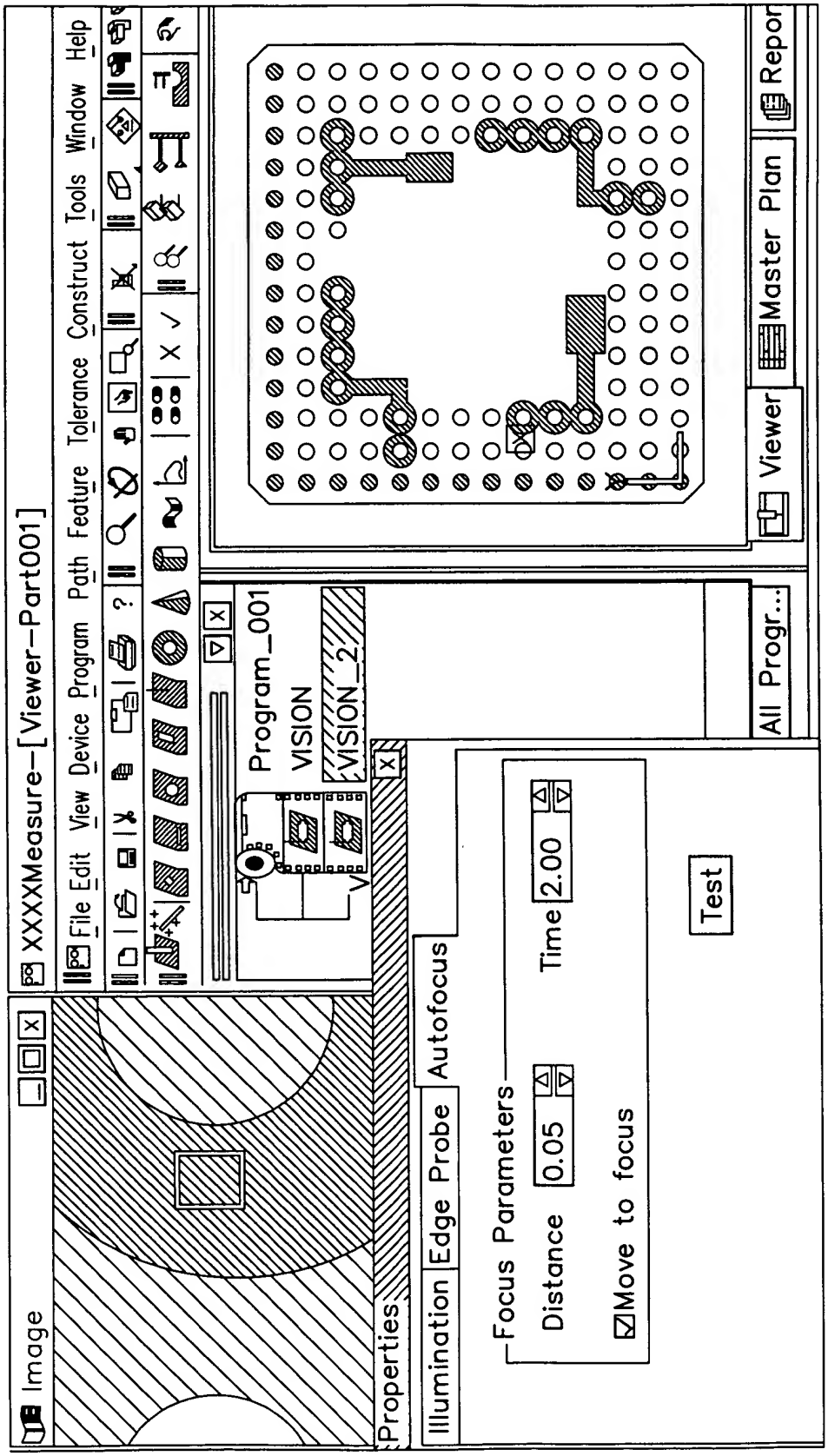
XXXXMeasure-[Viewer-Part001]
File Edit View Device Program Path Feature Tolerance Construct Tools Window Help
Image
Program_001
VISION
VISION_2
Viewer
Master Plan
Repor
Properties
Illumination
Edge Probe
Autofocus
Focus Parameters
Distance
0.05
Time
2.00
Move to focus
Test
All Progr...

FIG. 5

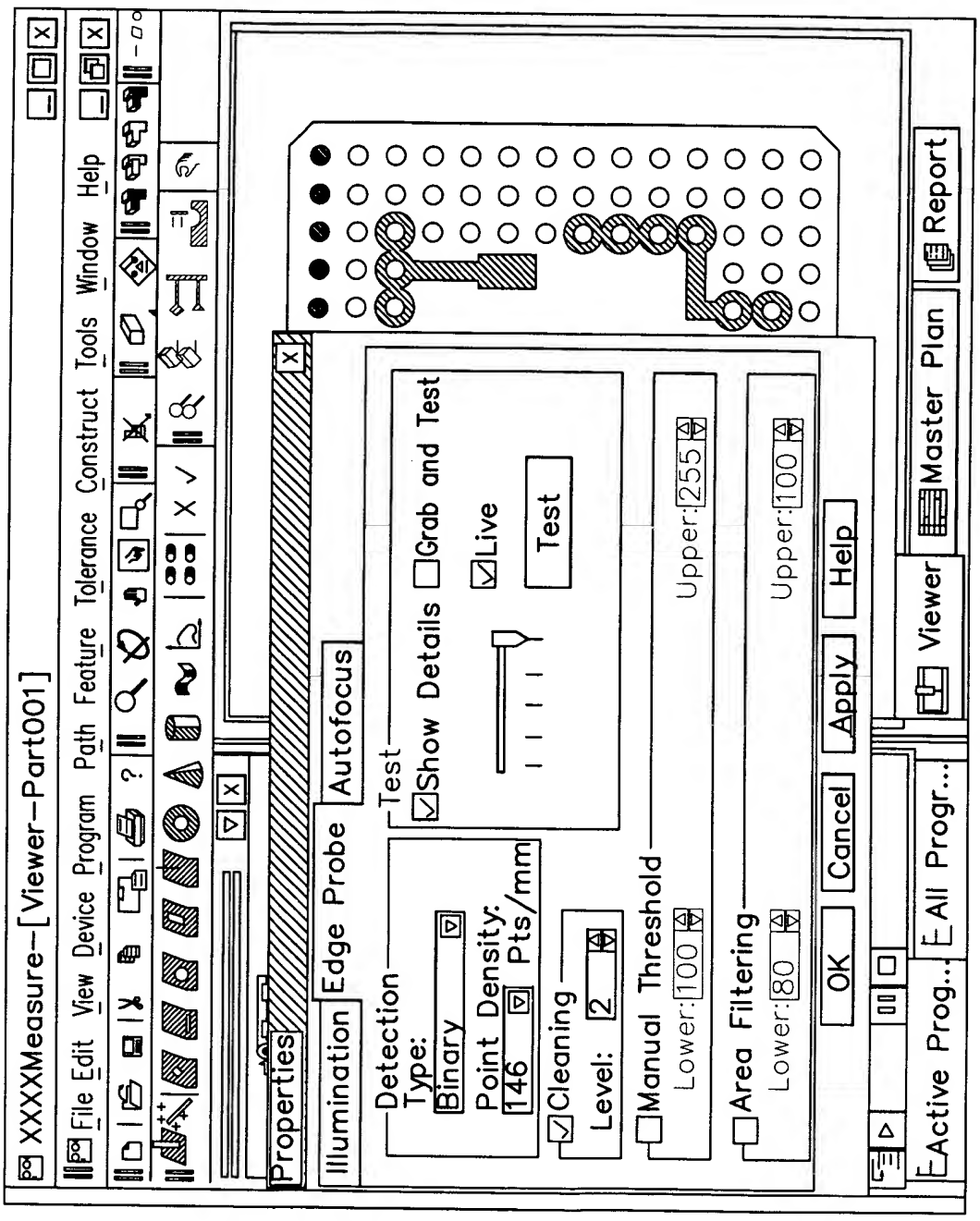
XXXXMeasure-[Viewer-Part001]
File Edit View Device Program Path Feature Tolerance Construct Tools Window Help
Properties
Illumination
Edge Probe
Autofocus
Detection
Type:
Binary
Point Density:
146
Pts/mm
Cleaning
Level:
2
Test
Show Details
Grab and Test
Live
Test
Manual Threshold
Lower:100
Upper:255
Area Filtering
Lower:80
Upper:100
OK
Cancel
Apply
Help
Active Prog...
All Progr...
Viewer
Master Plan
Report

FIG. 6

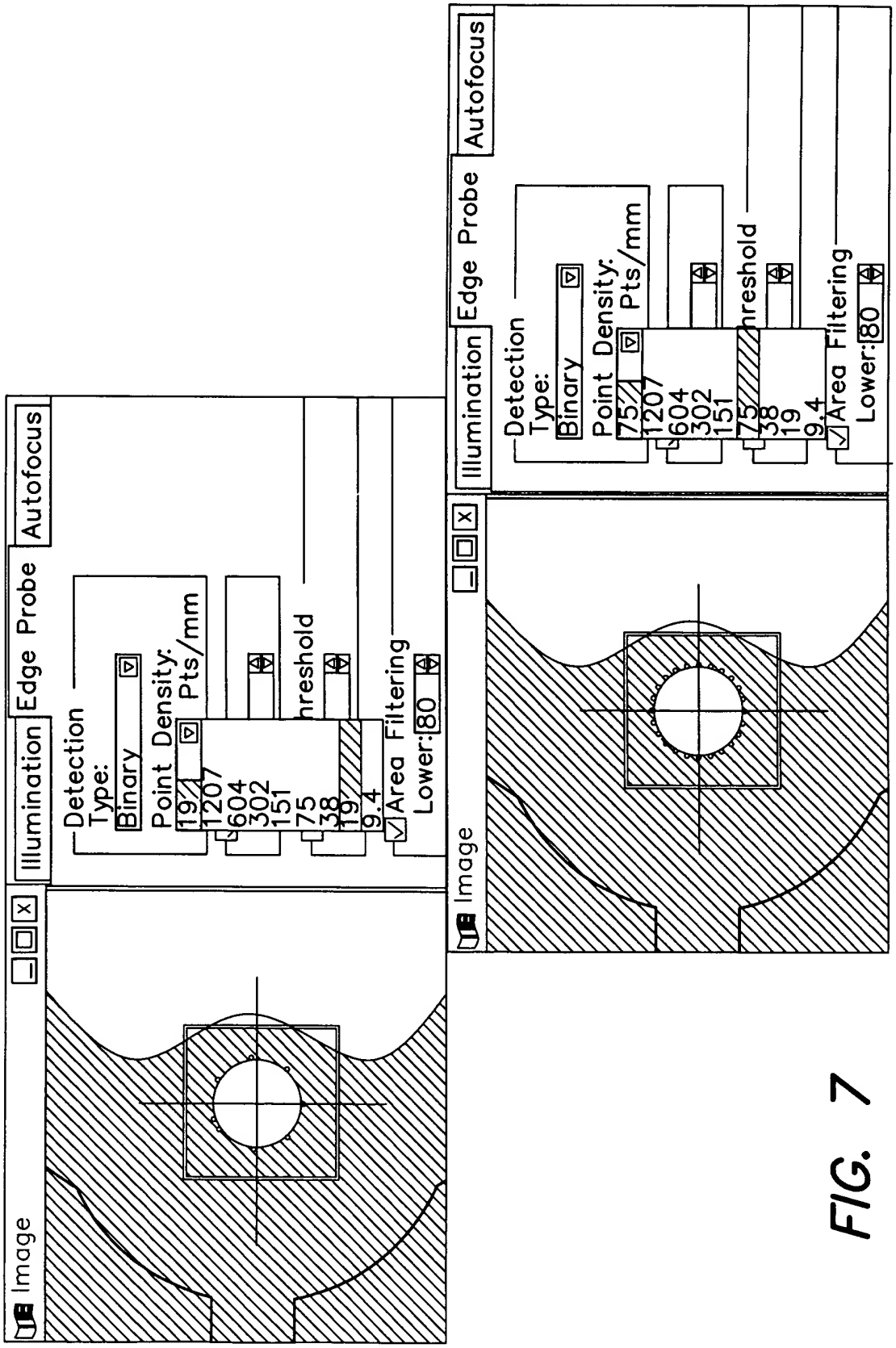
Image
Illumination
Edge Probe
Autofocus
Detection
Type:
Binary
Point Density:
Pts/mm
1207
604
302
151
75
38
19
9.4
Area Filtering
Lower:
80
Image
Illumination
Edge Probe
Autofocus
Detection
Type:
Binary
Point Density:
Pts/mm
1207
604
302
151
75
38
19
9.4
Area Filtering
Lower:
80

FIG. 7

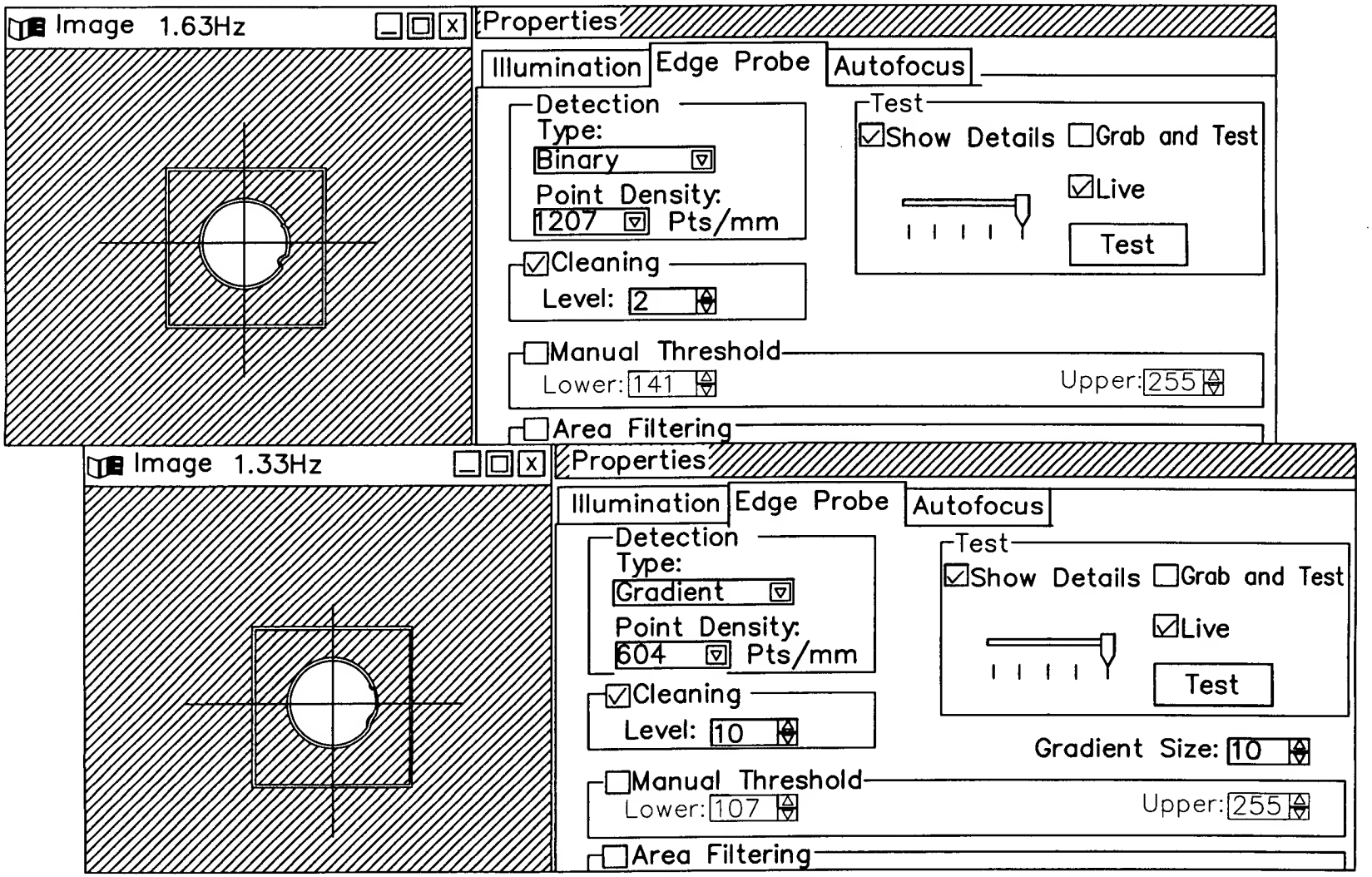
Image 1.63Hz
Properties
Illumination
Edge Probe
Autofocus
Detection
Type:
Binary
Point Density:
1207
Pts/mm
Cleaning
Level:
2
Test
Show Details
Grab and Test
Live
Test
Manual Threshold
Lower:
141
Upper:
255
Area Filtering
Image 1.33Hz
Properties
Illumination
Edge Probe
Autofocus
Detection
Type:
Gradient
Point Density:
604
Pts/mm
Cleaning
Level:
10
Test
Show Details
Grab and Test
Live
Test
Gradient Size:
10
Manual Threshold
Lower:
107
Upper:
255
Area Filtering

FIG. 8

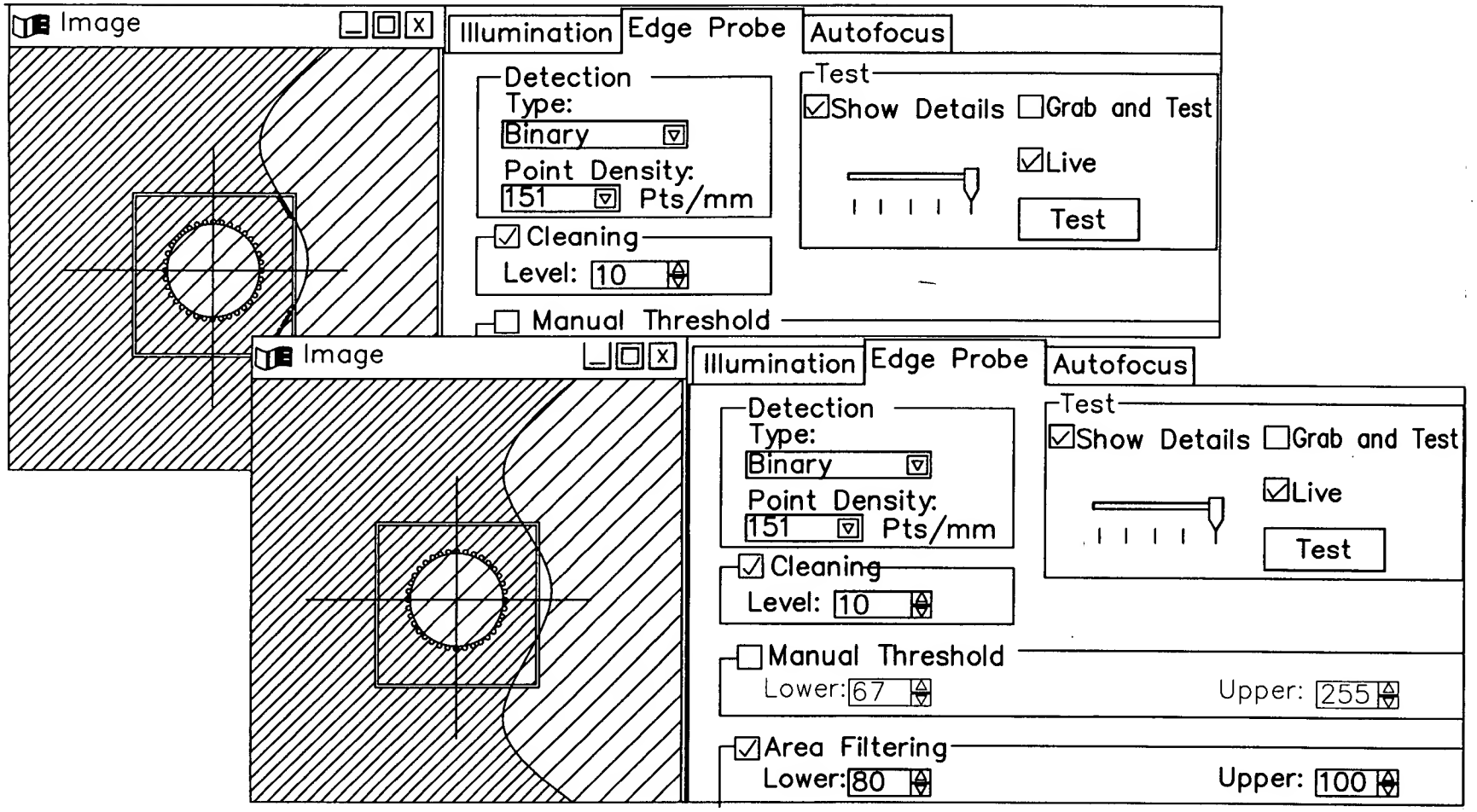
Image
Illumination
Edge Probe
Autofocus
Detection
Type:
Binary
Point Density:
151
Pts/mm
Cleaning
Level: 10
Manual Threshold
Test
Show Details
Grab and Test
Live
Test
Image
Illumination
Edge Probe
Autofocus
Detection
Type:
Binary
Point Density:
151
Pts/mm
Cleaning
Level: 10
Manual Threshold
Lower: 67
Upper: 255
Area Filtering
Lower: 80
Upper: 100
Test
Show Details
Grab and Test
Live
Test

FIG. 9

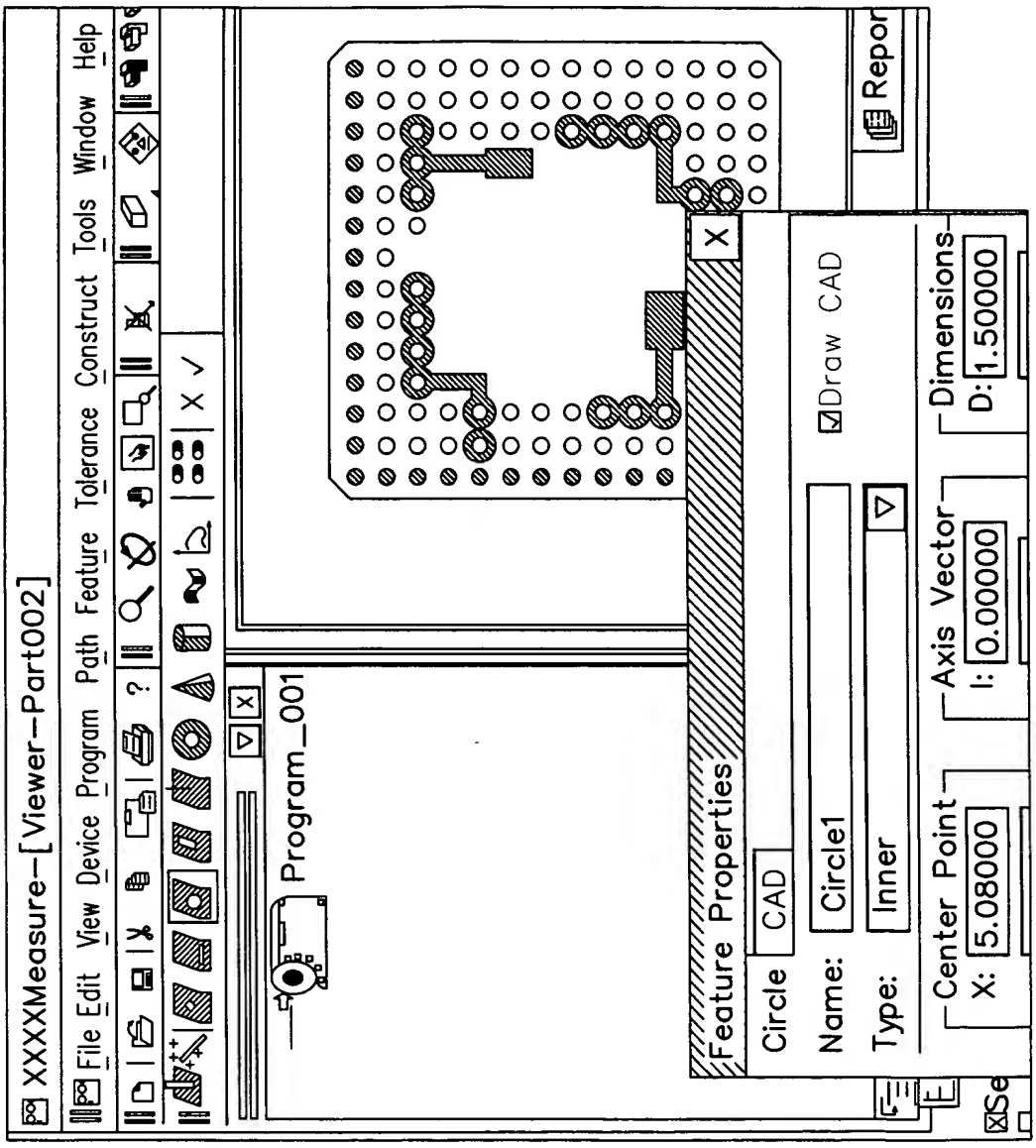
XXXXMeasure-[Viewer-Part002]
File Edit View Device Program Path Feature Tolerance Construct Tools Window Help
Program_001
Feature Properties
Circle
CAD
Name:
Circle1
Type:
Inner
Center Point
X:
5.08000
Axis Vector
I:
0.00000
Dimensions
D:
1.50000
Draw CAD
Repor

FIG. 10

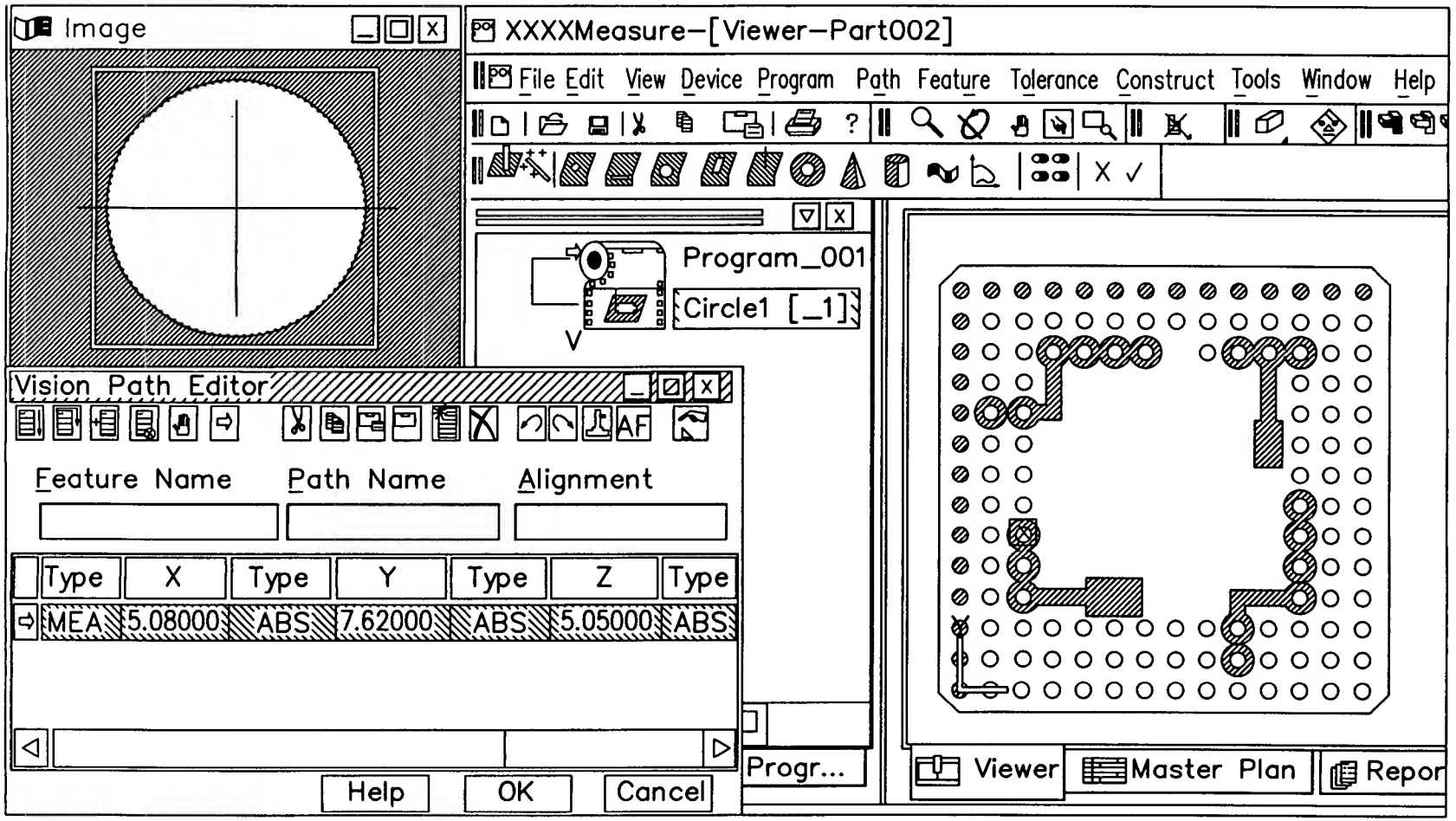
Image
XXXXMeasure–[Viewer–Part002]
File Edit View Device Program Path Feature Tolerance Construct Tools Window Help
Program_001
Circle1 [_1]
Vision Path Editor
Feature Name
Path Name
Alignment
Type X Type Y Type Z Type
MEA 5.08000 ABS 7.62000 ABS 5.05000 ABS
Help
OK
Cancel
Progr...
Viewer
Master Plan
Repor

FIG. 11

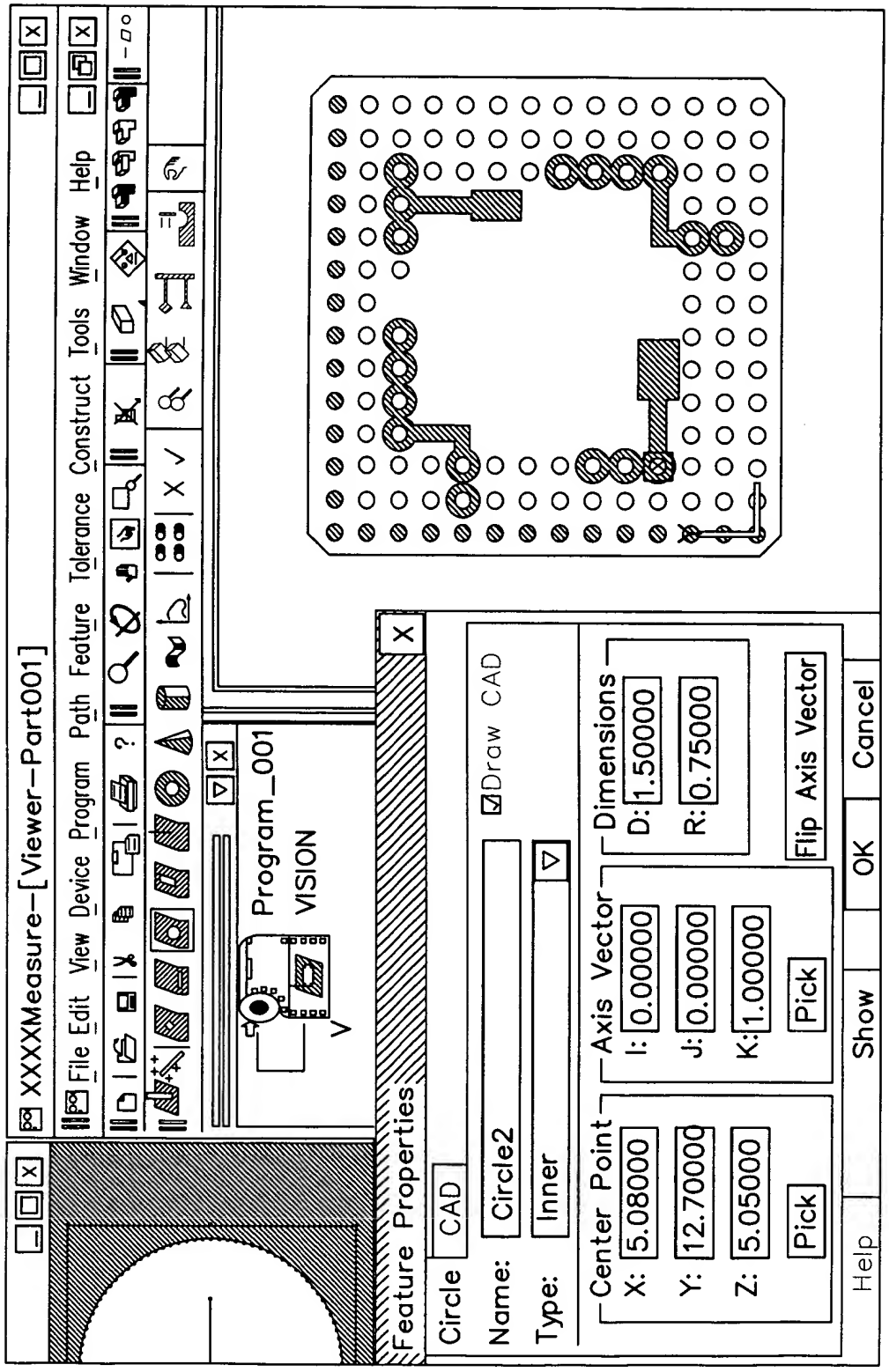
XXXXMeasure-[Viewer-Part001]
File Edit View Device Program Path Feature Tolerance Construct Tools Window Help
Program_001
VISION
Feature Properties
Circle
CAD
Name:
Circle2
Type:
Inner
Draw CAD
Center Point
X: 5.08000
Y: 12.70000
Z: 5.05000
Pick
Axis Vector
I: 0.00000
J: 0.00000
K: 1.00000
Pick
Dimensions
D: 1.50000
R: 0.75000
Flip Axis Vector
Help
Show
OK
Cancel

FIG. 12

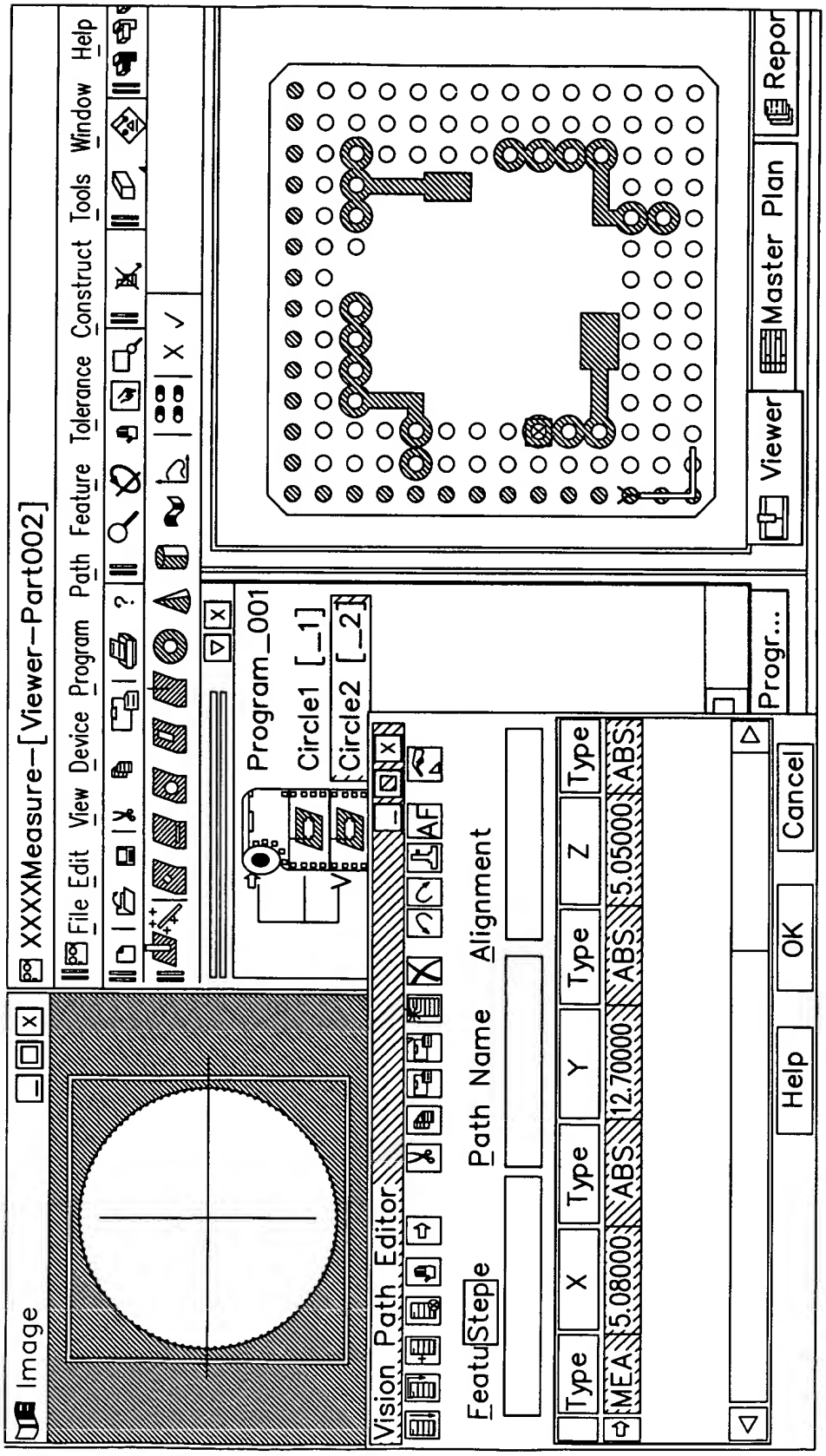
XXXXMeasure-[Viewer-Part002]
File Edit View Device Program Path Feature Tolerance Construct Tools Window Help
Image
Program_001
Circle1 [_1]
Circle2 [_2]
Vision Path Editor
Feature Steple
Path Name Alignment
Type X Type Y Type Z Type
MEA 5.08000 ABS 12.70000 ABS 5.05000 ABS
Help OK Cancel
Viewer
Master Plan
Progr...

FIG. 13

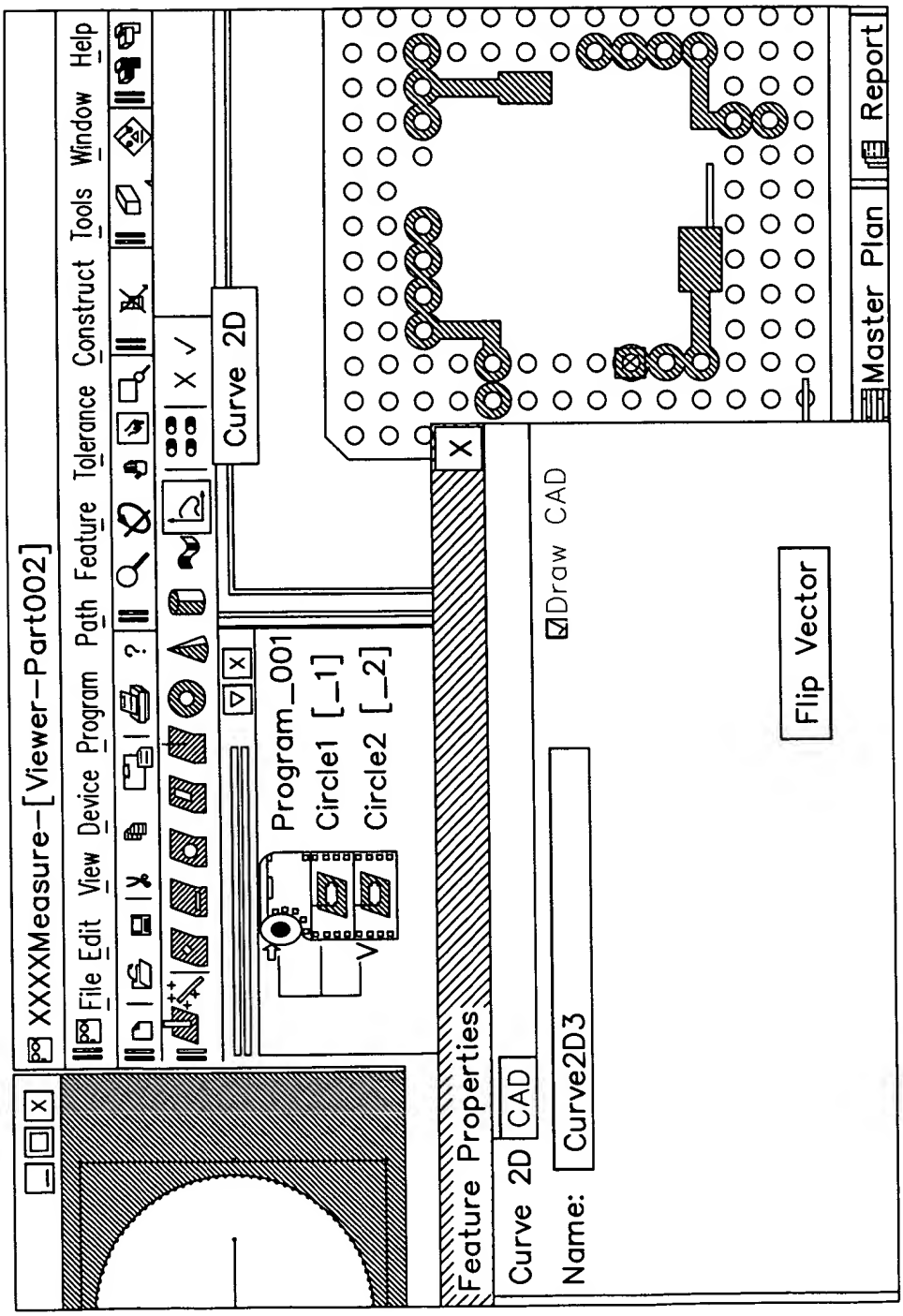


FIG. 14A

FIG. 14B

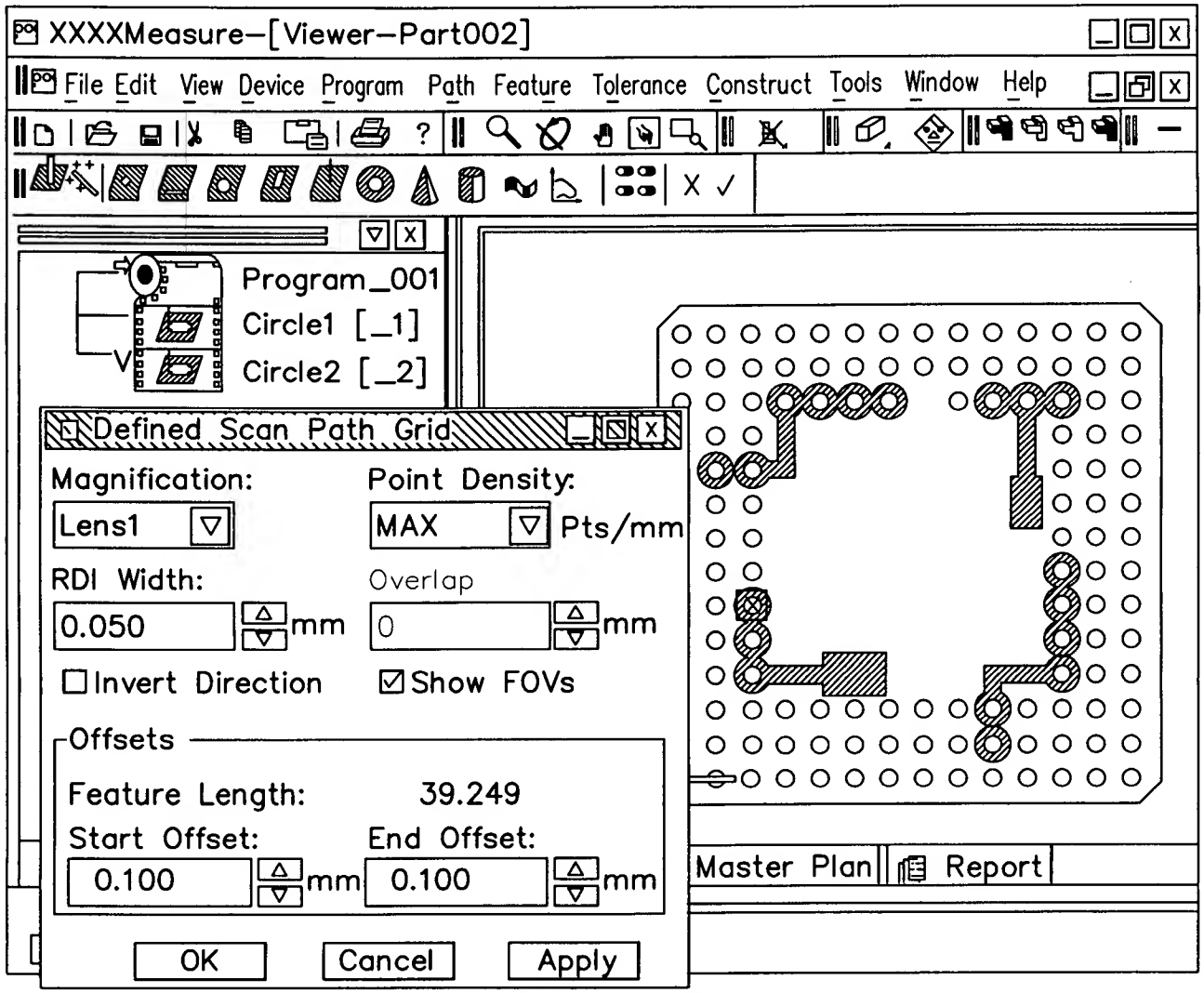
XXXXMeasure–[Viewer–Part002]
File Edit View Device Program Path Feature Tolerance Construct Tools Window Help
Program_001
Circle1 [_1]
Circle2 [_2]
Defined Scan Path Grid
Magnification:
Lens1
Point Density:
MAX
Pts/mm
RDI Width:
0.050
mm
Overlap
0
mm
Invert Direction
Show FOVs
Offsets
Feature Length:
39.249
Start Offset:
0.100
mm
End Offset:
0.100
mm
OK
Cancel
Apply
Master Plan
Report

FIG. 14B

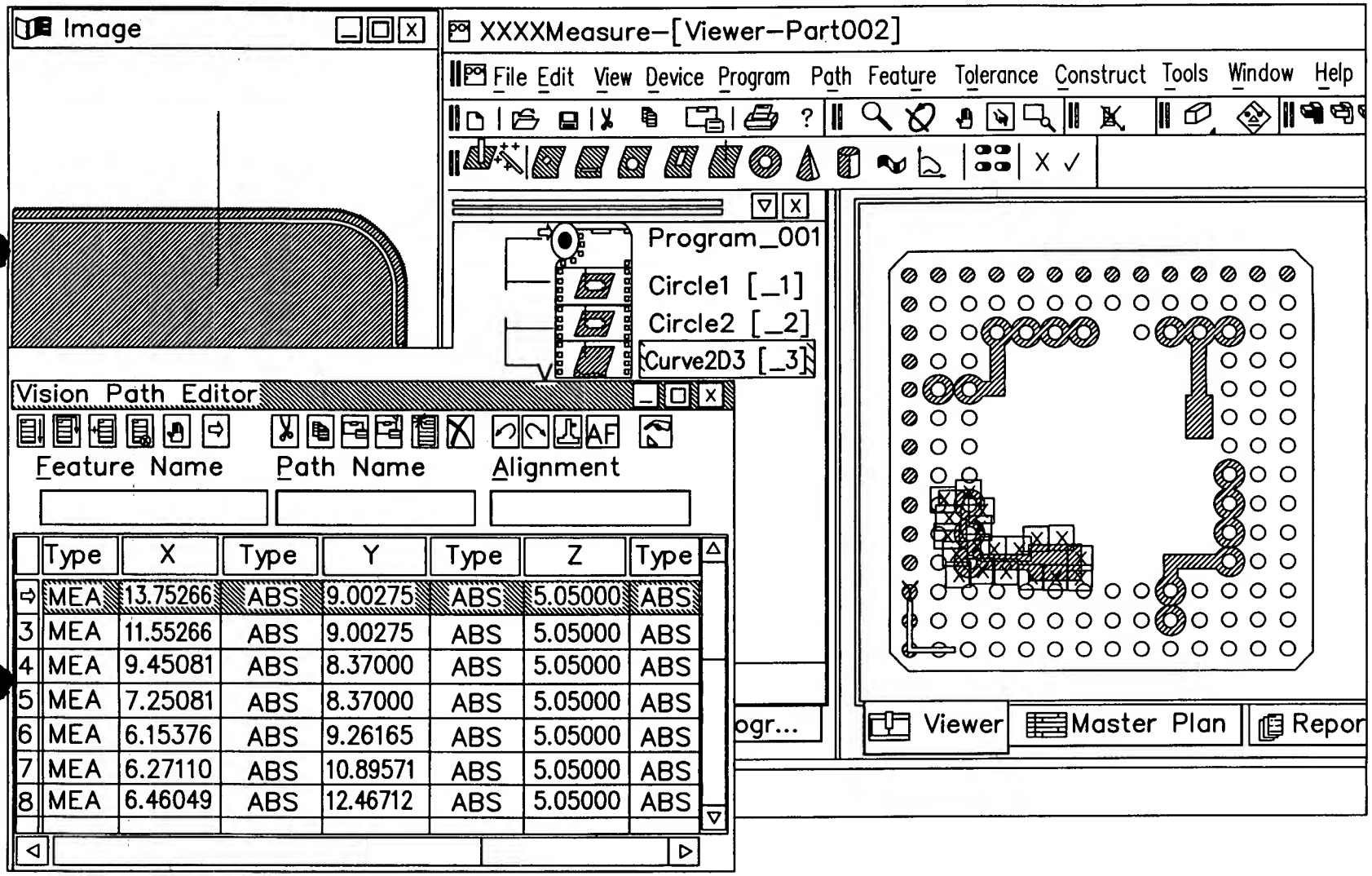
Image
XXXXMeasure–[Viewer–Part002]
File Edit View Device Program Path Feature Tolerance Construct Tools Window Help
Program_001
Circle1 [_1]
Circle2 [_2]
Curve2D3 [_3]
Vision Path Editor
Feature Name
Path Name
Alignment
Type X Type Y Type Z Type
MEA 13.75266 ABS 9.00275 ABS 5.05000 ABS
3 MEA 11.55266 ABS 9.00275 ABS 5.05000 ABS
4 MEA 9.45081 ABS 8.37000 ABS 5.05000 ABS
5 MEA 7.25081 ABS 8.37000 ABS 5.05000 ABS
6 MEA 6.15376 ABS 9.26165 ABS 5.05000 ABS
7 MEA 6.27110 ABS 10.89571 ABS 5.05000 ABS
8 MEA 6.46049 ABS 12.46712 ABS 5.05000 ABS
Viewer
Master Plan
Repor

FIG. 15

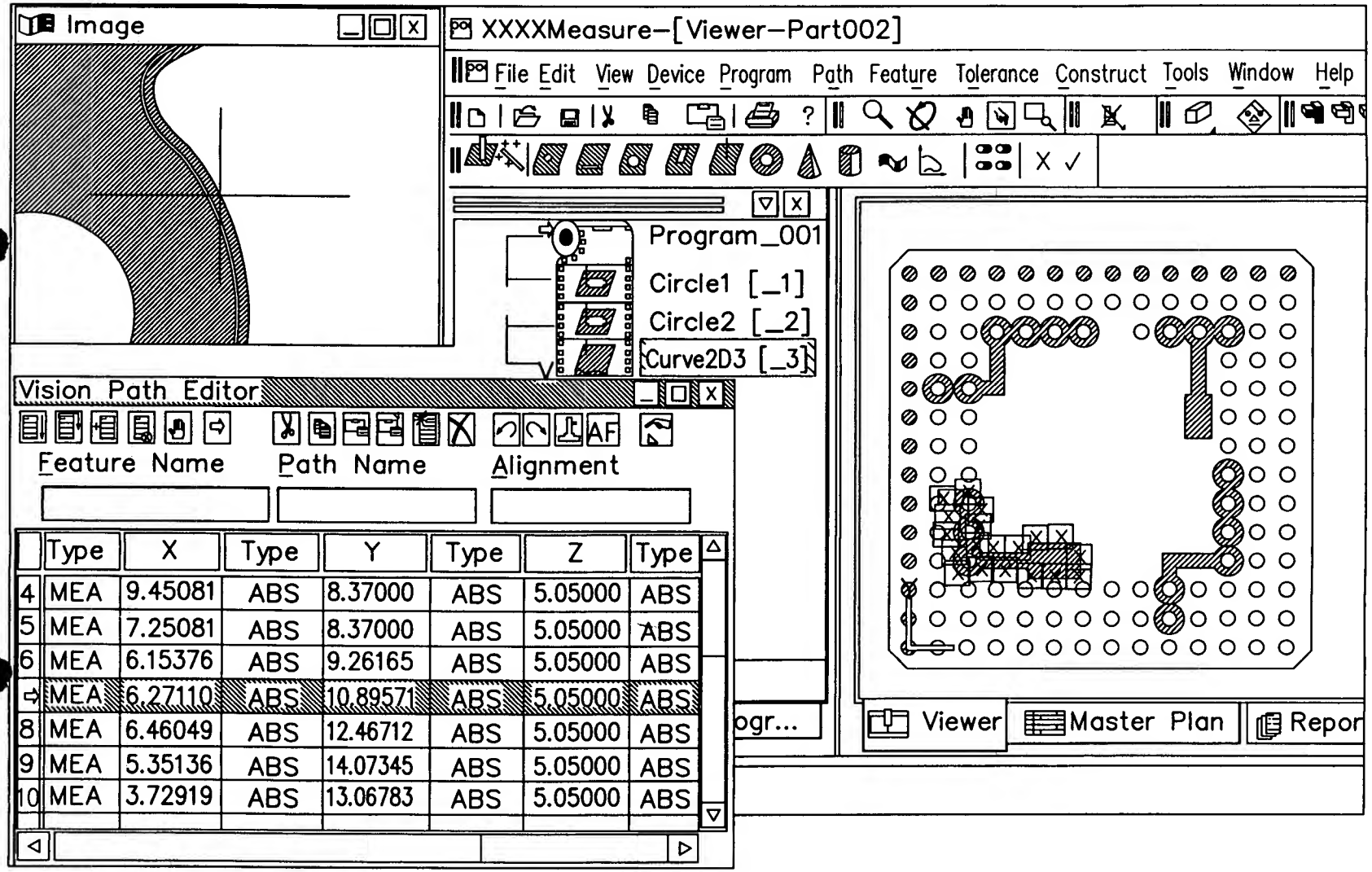
Image
XXXXMeasure–[Viewer–Part002]
File Edit View Device Program Path Feature Tolerance Construct Tools Window Help
Program_001
Circle1 [_1]
Circle2 [_2]
Curve2D3 [_3]
Vision Path Editor
Feature Name
Path Name
Alignment
Type X Type Y Type Z Type
4 MEA 9.45081 ABS 8.37000 ABS 5.05000 ABS
5 MEA 7.25081 ABS 8.37000 ABS 5.05000 ABS
6 MEA 6.15376 ABS 9.26165 ABS 5.05000 ABS
MEA 6.27110 ABS 10.89571 ABS 5.05000 ABS
8 MEA 6.46049 ABS 12.46712 ABS 5.05000 ABS
9 MEA 5.35136 ABS 14.07345 ABS 5.05000 ABS
10 MEA 3.72919 ABS 13.06783 ABS 5.05000 ABS
Viewer
Master Plan

FIG. 16

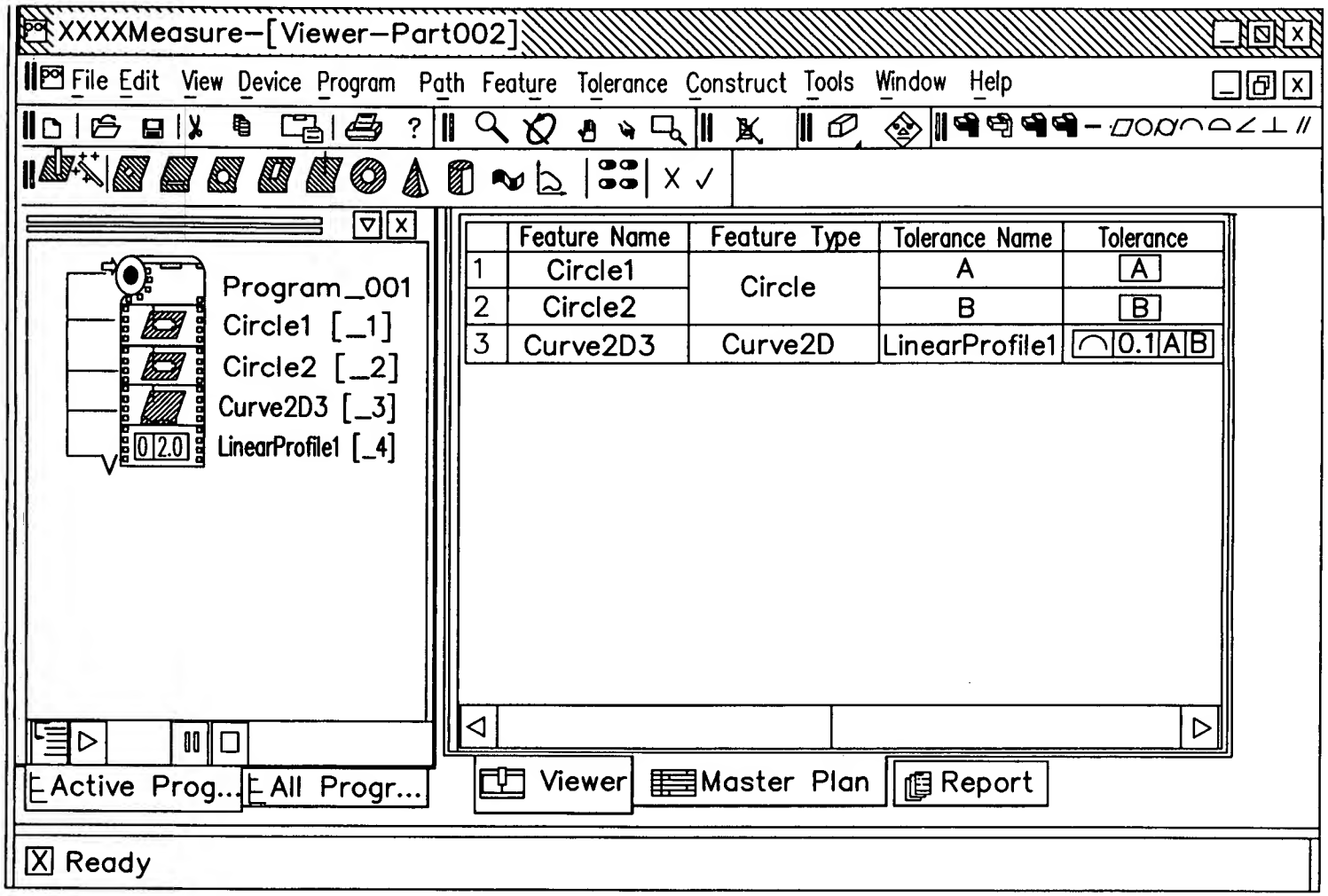
XXXXMeasure–[Viewer–Part002]
File Edit View Device Program Path Feature Tolerance Construct Tools Window Help
Program_001
Circle1 [_1]
Circle2 [_2]
Curve2D3 [_3]
LinearProfile1 [_4]
Feature Name
Feature Type
Tolerance Name
Tolerance
1
Circle1
Circle
A
A
2
Circle2
B
B
3
Curve2D3
Curve2D
LinearProfile1
0.1 A B
Active Prog...
All Progr...
Viewer
Master Plan
Report
Ready

FIG. 17

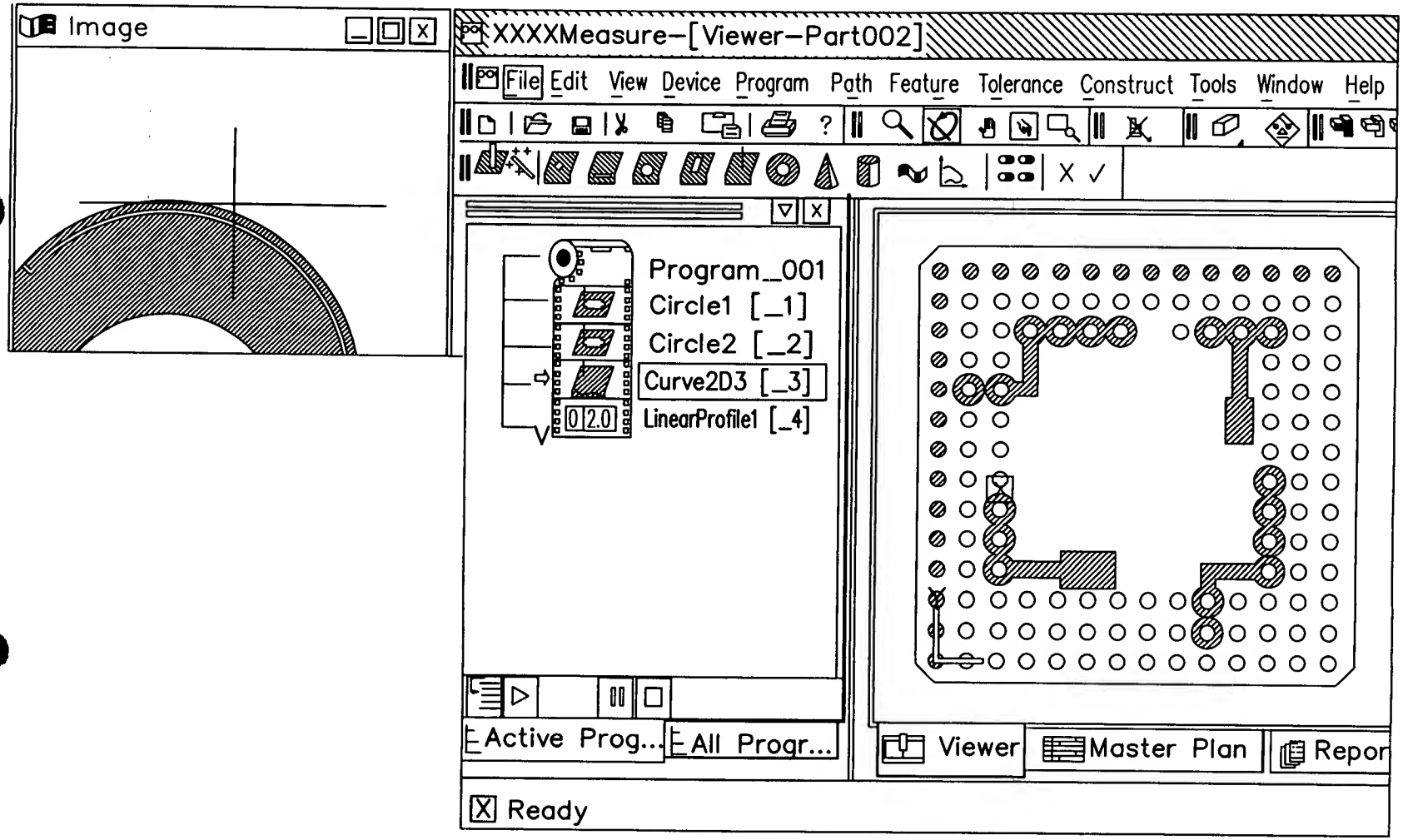
Image
XXXXMeasure–[Viewer–Part002]
File Edit View Device Program Path Feature Tolerance Construct Tools Window Help
X ✓
Program_001
Circle1 [_1]
Circle2 [_2]
Curve2D3 [_3]
0 2.0
LinearProfile1 [_4]
Active Prog...
All Progr...
Viewer
Master Plan
Repor
Ready

FIG. 18